

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT

CIRC ACCESSION NO--AT0129944

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENT OF ION COMPOSITION BY MEANS OF MP 12 ROCKETBORNE MASS SPECTROMETERS OF BENNET TYPE AT POLAR AND MID LATITUDES OF THE E REGION. AT MID LATITUDES THESE MEASUREMENTS WERE PERFORMED UNDER THE PROGRAM OF COMPLEX STUDY OF EFFECTS CAUSED BY SOLAR FLARES. AMONG OTHER EXPERIMENTS, TWO ROCKETS WERE LAUNCHED WITH ION MASS SPECTROMETERS ON BOARD. THE LAUNCHINGS TOOK PLACE ON APRIL 1 AND 20, 1969, AT 1700 AND 17-4 LT, RESPECTIVELY. THE FIRST SOUNDINGS CHARACTERIZE THE UNDISTURBED IONOSPHERE AND THE SECOND THE DISTURBED ONE, BECAUSE AVERAGE INTENSITY MAGNETIC STORMS WERE OBSERVED BETWEEN THESE TWO LAUNCHINGS. IN PARTICULAR, ABSOLUTE ION CONCENTRATION INCREASE WAS OBSERVED IN THE DISTURBED IONOSPHERE REACHING ITS MAXIMUM EFFECT AT 99 KM. THE PREDOMINANT ION CONCENTRATION RATIO O₂(PLUS)-NO(PLUS) ALSO BECAME DIFFERENT. AT POLAR LATITUDES THE ROCKET WAS LAUNCHED AT 2350 LT ON MARCH 21 DURING UNDISTURBED MAGNETIC CONDITIONS. THE IONOSPHERIC STATION DATA SHOW THE SPORADIC E WAS OBSERVED AT THIS TIME AT THE 100 KM ALTITUDE. FROM AN ANALYSIS OF THE DATA OBTAINED IT WAS ESTABLISHED THAT IN THE ALTITUDE RANGE FROM 97 TO 171 KM NO(PLUS) AND O₂(PLUS) IONS WERE PREDOMINANT IN THE NIGHT POLAR ATMOSPHERE; AT HEIGHTS GREATER THAN 150 KM SMALL QUANTITIES OF O(PLUS) WERE PRESENT. FACILITY: INSTITUT EKSPERIMENTAL'NOI METEOROLOGI OBNINSK, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--MASS SPECTROMETRIC INVESTIGATIONS OF IONIC AND NEUTRAL COMPOSITION
OF THE UPPER ATMOSPHERE BY MEANS OF M12 ROCKETS -U-

AUTHOR--ZHLUDKO, A.D., POLOSKEV, S.M., POKHUNKOV, A.A., TESLENKO, V.P.,
SHIDLOVSKIY, A.A.

COUNTRY OF INFO--USSR

SOURCE--METEOROLOGIIYA I GIDROLOGIIYA, 1970, NR 3, PP 72-82

DATE PUBLISHED-----70

28
5
33

SUBJECT AREAS--ATMOSPHERIC SCIENCES, MISSILE TECHNOLOGY

TOPIC TAGS--MASS SPECTROMETER, UPPER ATMOSPHERE, METEOROLOGIC ROCKET, GAS
COMPOSITION ANALYZER/(U)M12 METEOROLOGIC ROCKET

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1977/0162

STEP NO--UR/CC5C/70/000/003/0072/0082

CIRC ACCESSION NO--APCC43756

UNCLASSIFIED

Acc. Nr: **AP0043756**

Raf. Code: UR 0050

PRIMARY SOURCE: *Meteorologiya i Gidrologiya*, 1970, Nr 3,
pp 72-82

MASS-SPECTROMETRIC INVESTIGATIONS OF IONIC AND NEUTRAL
COMPOSITION OF THE UPPER ATMOSPHERE BY MEANS OF MR-12 ROCKETS

A. D. Zhudko, S. M. Poloskov, A. A. Pokhunkov, V. P. Testenko,
Shidlovskiy, A. A.; Ivanov, Yu. F.

Some research technique problems of gas composition of the Earth's upper atmosphere are considered, results of the investigation of the neutral and ionic composition at the heights of 100-180 km are given.

11
REEL/FRAME
19770162

24/2

USSR

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UDC 612.58:612.13:612.821.61

3

ARYNCHYN, M. I., NIKITSIN, U. M., MATSKEVICH, B. I., ZEMAKINA, V. A.,
KAZLOVA, L. M., ZEMAKIN, I. K., SHAFRANSKI, L. V.

"Differential (Complex) Hypothermia and Its Experimental and Theoretical Basis"

Minsk, Vesti Akademiyi Nauk BSSR, Seryya biyalagichaykh Navuk,
No 1, 1970, pp 60-66

Abstract: A broad review of the applications of hypothermia is presented and the various biological functions involved, including EKG, biochemistry, hemodynamics, central and peripheral affects, etc. are discussed. An original construction of a cooling chamber is shown, consisting of two chambers, one for the head, and one for the body, in which the temperatures differ. The effect of two-chamber hypothermia, occurring under different degrees of temperature on various reflexes in dogs, hemodynamics, hormones, minerals, and blood proteins is discussed. Various clinical possibilities are discussed and the use of this apparatus in cardiac surgery is suggested.

1/1

USSR

UDC 612.58:612.13:612.831.01

ARYNCHYN, M. I., NIKETSYN, U. M., MATSKEVICH, B. I., ZEMARINA, V. A.,
KATLOVA, E. M., ZEMANIN, I. K., SHAFRANSKI, L. V.

"Differential (Complex) Hypothermia and Its Experimental and Theoretical Basis"

Minsk, Vesti Akademiyi Nauk SSSR, Seryya biyologicheskikh Nauk,
No 1, 1970, pp 60-66

Abstract: A broad review of the applications of hypothermia is presented and the various biological functions involved, including EKG, biochemistry, hemodynamics, central and peripheral affects, etc. are discussed. An original construction of a cooling chamber is shown, consisting of two chambers, one for the head, and one for the body, in which the temperatures differ. The effect of two-chamber hypothermia, occurring under different degrees of temperature on various reflexes in dogs, hemodynamics, hormones, minerals, and blood proteins is discussed. Various clinical possibilities are discussed and the use of this apparatus in cardiac surgery is suggested.

1/1

Analysis and Testing

USSR

UDC: 669.017.11

CHATTERDZHI, A. K., MALYSHEVA, T. Ya., and ZHMOYDIN, G. I., Moscow

"Phase Composition of Slags of the Calcium Oxide-Aluminum Oxide-Calcium Fluoride System"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, Nov-Dec 70, pp 58-64

Abstract: The information available on the phase composition of $\text{CaO-Al}_2\text{O}_3\text{-CaF}_2$ slags is inadequate, fragmentary, and contradictory. Optical and x-ray diffraction analyses of heat-treated representative samples indicate that the $\text{CaO-Al}_2\text{O}_3\text{-CaF}_2$ ternary system is nonequilibrium in open air and that interaction occurs. On the basis of this examination it also became possible to explain certain features of the fusibility isotherms of the ternary system. In a ternary system the primary crystallization fields all have binary calcium aluminates. With the formation of the ternary compound $3\text{CaO}\cdot 3\text{Al}_2\text{O}_3\cdot \text{CaF}_2$ the fluoride derivative of the unstable phase C_{12}A_7 becomes most stable while the stable monoaluminate CA is limited to a narrow range of compositions up to 14% CaF_2 . The irregular occurrence of the ternary compound $\text{C}_{32}\text{A}_2\text{CaF}_2$ in

USSR

CHATTERDEVI, A. K., et al, Izvestiya Akademii Nauk SSSR, Metally, No 6, Nov-Dec 70, pp 58-64

its crystallization fields and the systematic penetration of Ca_2 in them confirms the instability of the ternary compound in an open system. The occurrence of CaO in the triangle $C_3A-C_{11}A_7, CaF_2$ signifies the possibility of decomposition of compound C_3A to form a fluoride phase in free lime.

2/2

USSR

UDC 543.42.08

ZHMURKIN, Yu. A., and SHUSHKANOV, V. M.

"Small-Scale Source of Direct-Current Arc for Spectral Analysis"

V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp. 1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1"] Sverdlovsk, 1971, pp 41-42 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.992 by V. S. K.)

Translation: A new developed schema of a thyrite d-c arc source (AS) used for spectral determination of the oxygen content in metal by the Fassel method is discussed. The AS consists of the power block control block, timer, safety device, and a sparking block for arc ignition. The arc current is controlled in the 5-50 amp range, the power used by the control block is one watt. The unit is naturally cooled by air. The dimensions of the AS are 500x500x400 mm. A two year service experience of the AS has demonstrated its high degree of reliability and stability in operation. One illustration, two bibliographical references.

1/1

USSR

UDC 546.185:541.651.2

ZHMUROVA, I. N., YURCHENKO, V. G., KUKHAR', V. P., and ZOLOTAREVA, L. A.,
Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"The Effect of the Substituents at the Phosphorus Atom on the Reactivity
and Electron Donor Properties of the Phosphazo Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2656-
2660

Abstract: In an attempt to compare the effects of substituents on the
basicity constants and electron spectra of phosphazobenzenes, pK_a values
of a series of triazylphosphazobenzenes were determined. The basicity
constants vary considerably with the electron nature of alkyl substituents --
up to 6-7 pK_a units. The substituents at the phosphorus atom have a lesser
influence on the electron donor properties of the phosphazo group in the
excited state than on the reactivity of the P:N.

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USSR

UDC 547.419.1

ZHMUROVA, I. N., YURCHENKO, R. I., KUKHAR', V. P., ZOLOTAREVA, L. A., and
KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences, Ukrainian
SSR

"Protonation of Triphenylphosphazobenzene. II. Effect of Substituents on
the Position of Tautomeric Equilibrium"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1954-1959

Abstract: Tautomeric equilibrium in the solutions of 4-triphenylphosphazobenzene salts depends on the concentration of acid as well as on the electronic nature of the substituents at 4'-position. The differences in absorption maxima in neutral and acid media and the basicity constants of 4-triphenylphosphazobenzene can be correlated with the O^- constants of 4'-substituents.

1/1

USSR

UDC 547.558.1

ZHMUROVA, I. N., YURCHENKO, R. I., and MARTYNYUK, A. P., Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"The Effect of Substituents at the Phosphorus Atom on the Auxochromic Activity of the Phosphazo Group. III"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1040-1043

Abstract: The group $(C_6H_5)_2[(C_6H_5)_3P=N]P=N$ is a stronger auxochromic agent than $(C_6H_5)_2[(CH_3)_2N]P=N$ or $(C_6H_5)_3P=N$. The effect of the dimethylamino group on the electron-donating properties of the P=N bonds is diminished in comparison with its electron donating effect ($\sigma\varphi$). The increase in the auxochromic activity due to the substitution of one phenyl group by a triphenylphosphazo group is due evidently to the specific structure of the auxochrom $(C_6H_5)_2[(C_6H_5)_3P=N']_2=N'$. Two interconverted phosphazo groups contain the bond system P-N-P within which a uniform distribution of electron density is possible.

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USSR

UDC 546.185

ZHEMUROVA, I. N., YURCHENKO, R. I., YURCHENKO, V. G., TUKHAR', A. A., and
KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukraine SSR

"Electrophillic Constants (σ^+) of Phosphazo Groups"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 779-785

Abstract: Correlation equations between $\nu_{\max}$ of para-disubstituted benzenes $\text{XC}_6\text{H}_4\text{Y}$ -- where X is a fluctuating donor and Y is a stable acceptor -- and the electrophillic constants of the X group may be used to calculate the σ^+ of new electron-donor groups. This linear relationship between $\nu_{\max}$ and σ^+ was determined for benzaldehydes, acetophenones, nitrobenzenes, azobenzenes, and nitroazobenzenes in ethanol, acetonitrile, heptane, hexane, and isooctane. The σ^+ values of the phosphazo group were determined from these. Data on both $\nu_{\max}$ and σ^+ are given in four tables and a graph. The change in the electronic configurations of groups in the phosphorus atom had little influence on the σ^+ .

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USSR

UDC 541.67 + 547.558.1

PEN'KOVSKIY, V. V., YEGOROV, YU P., ZHMUROVA, I. N., MARTYNYUK, A. P., and SHURUBURA, A. K., Institute of Organic Chemistry, Acad. Sc. UkrSSR, Kiev

"Distribution of Electronic Density in Anion Radicals Containing Triarylphosphazo Groups"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 1, Jan-Feb 73, pp 112-116

Abstract: Eight anion radicals of the type $(p-RC_6H_4)_2(p-R'C_6H_4)P:N-C_6H_4NO_2-p$ generated by the electrochemical method in acetonitrile have been studied by means of EPR. In all cases a split was noted on the p^{31} nucleus indicating π -electronic interaction of the P:N group with p-nitrophenyl residue of the anion radical. This effect can be explained only on the basis of $d\pi-p\pi$ interaction. The effects of various electron donor and electron acceptor R and R' on the distribution of spin density has been compared. Qualitative explanation of this effect has been proposed based on the mobility of π -electrons of the imino nitrogen and a direct polar conjugation of the phosphazo group with the nitro group. The values of the splitting constants at the p^{31} nucleus are not correlated with the σ -constants of R and R'.

1/1

USSR

UIC 546.185

ZHIMUROVA, I. N., YURCHENKO, V. G., MARTYNYUK, A. P., and KIRSANOV, A. V.,
Institute of Organic Chemistry, Academy of Sciences, UkrSSR

"Effect of the Substituents at the Phosphorus Atom on the Auxochromic Action of
the Phosphazo Group. II"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1948-1953

Abstract: On the basis of a series of phosphazobenzenes and phosphazobenzene-
s it was shown that introduction of electron donor substituents onto phenyl radi-
cals of the triphenylphosphazo group had practically no effect on its auxochromic
action.

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USSR

UDC 546.185

ZHMUROVA, I. N., YURCHENKO, V. G., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences, Ukrainian SSR

"Effect of the Substituents at the Phosphorus Atom on the Auxochromic Action of the Phosphazo Group. I"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1944-1948

Abstract: On the basis of a series of phosphazobenzenes it was shown that an increase or decrease in the electron donor effect of the substituents at the phosphorus atom has practically no effect on the auxochromic action of the phosphazo group.

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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ANION RADICALS OF PHOSPHAZO COMPOUNDS. CONDUCTIVITY OF S AND SO
BRIDGE GROUPS -U-
AUTHOR--(05)-PENKOVSKIY, V.V., KUZMINSKIY, B.N., YEGOROV, YU.P., ZHMROVA,
I.N., MARTYNYUK, A.P.
COUNTRY OF INFO--USSR
SOURCE--TOER. EKSP. KHIM. 1970, 6(1), 94-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRON DENSITY, EPR SPECTRUM, ORGANIC PHOSPHORUS COMPOUND,
AZO COMPOUND, SULFUR OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0910 STEP NO--UR/0379/70/006/001/0094/0097
CIRC ACCESSION NO--AP0137938
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137938

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON D. DISTRIBUTION WAS STUDIED, BY EPR SPECTROSCOPY, IN COMPS. TREATED ELECTROCHEM. TO PRODUCE ANION RADICALS. THUS TREATED WERE I (R PRIME1, R PRIME2, R PRIME3, AND R PRIME4 GIVEN): N:PPH SUB3, H, H, NO SUB2; SN:PPH SUB3, H, H, NO SUB2; SN:PPH SUB3, NO SUB2, H, H; SN:PPH SUB3, NO SUB2 H, NO SUB2; S(O)N:PPH SUB3, H, H, NO SUB2; SN:PPH SUB3, H, NO SUB2, H; S(O)N:PPH SUB3, NO SUB2, H, H; SNH SUB2, H, H, NO SUB2; SNME SUB2, H, H, NO SUB2. THE COND. OF THE SO BRIDGE IS MUCH LOWER THAN THAT OF THE S BRIDGE. FACILITY: INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 549.517.11.546.821

ZHMUD', YE. S., SHNIBLEV, A. YE., and METELKIN, P. N.

"Interaction of Titanium with a Highly Aluminous Ceramic"

Moscow, Neorganicheskiye Materialy, Vol 9, No 10, Oct 73, pp 1798-1801

Abstract: VT-1 titanium and A-995 ceramic material were used to study the products of interaction between titanium and the ceramic which consisted of 99.5% Al_2O_3 and 0.5% MgO with the effect of the MgO on the Ti- Al_2O_3 not considered in order to simplify the investigation. The reaction products are situated in the metallic portion of the layer bond in which their number, thickness, structure microhardness, and composition depend on temperature. In the bonds between the two materials, two layers are formed near the ceramic: the intermetallide TiAl with some oxygen content and a solid solution (Ti(Al, O)). These layers form at 1150-1450°C while at 1550-1600°C only the solid solution forms. The middle portion of the metal is the solid solution which forms independently of the temperature at which the studied alloys were produced. The oxides of titanium, sub-compounds of Ti-O and Ti-Al, as well as free aluminum were not detected in the investigated bonds. Four figures, one bibliographic reference.

1/1

USSR

UDC 546.821.546.623-31

ZHMUD', YE. S., and SHMELEV, A. YE.

"X-Ray Phase Study of the Interaction of Titanium with Aluminum Oxide"

Moscow, Neorganicheskiye Materialy, Vol 9, No 10, Oct 73, pp 1733-1737

Abstract: A systematic study was made of the interaction of Ti with Al_2O_3 in relation to heat-treatment mode and ratio of initial components. X-ray phase analysis showed that, in the reaction of powdered Ti and Al_2O_3 , solid solutions of O and Al in Ti are formed and under special conditions (during extended sintering in a specified temperature interval) the compounds TiO and TiAl are formed. One solid solution, $Ti(Al_2O_3)$, is present in the sintering products at 1500-1700°C. Data on the simultaneous formation of two solid solutions, as well as the change in concentration of one dissolved element with respect to the other in the solid solution $Ti(Al_2O_3)$, give evidence to the separate dissolution of O and Al in Ti, which is experimentally confirmed by the breakdown of the Al_2O_3 molecule during interaction with Ti and serves as an explanation of the formation of solid solutions during the interaction of substances with different crystal lattices. Three figures, nine bibliographic references.

1/1

USSR

UDC 621.385.032.5:666.3.037.5

ZHMUD', YE.S., SHMELEV, A.YE., PERSHINA, L.K., RONAMI, G.N., KUDOVYAROV, M.V.

"Microroentgen Spectral Investigation Of Ti-Ceramic A-995 And Ti-Ag-Ceramic A-995 Seals"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 117-123 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A104)

Translation: Distribution of the elements in experimental metalceramic seals was investigated with the aid of a Type MAR-1 microanalyzer and a microanalyzer of the Sames firm. For the metal part of the seals Ti-Ceramic A-995, it is established that the maximum concentration of aluminum is observed near the ceramic, and the titanium and oxygen in the depth of the metal. In the seals Ti-Ag-Ceramic A-995, a concentration of almost all the titanium close to the ceramic is detected, and the silver is in the central part of the metal, while in the initial state the silver is found between the ceramic and titanium. The results obtained confirm the accuracy of the conclusions made during x-ray structural investigation of the seals. Summary.

1/1

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USSR

UDC 539.67

ZHEMUDSKIY, A. Z., MIKHALKO, V. D., and MAKSIMYUK, P. A.

"Investigation of Internal Friction in Al-Mg-Li Alloys"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka", 1970, pp 54-56

Abstract: An investigation was made of the internal friction and natural vibration frequency square f^2 for an Al + 10% Mg + 2% Li alloy by the method of a low-temperature twisted pendulum.

The magnitude of activation energy was calculated and the behavior of a 70° peak under the effect of cold hardening was investigated. Conclusions regarding the possibility of the penetration of lithium atoms into the aluminum are presented. 4 figures, 5 references.

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1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--NEW SHORT WAVE SATELLITES IN THE K ALPHA SPECTRA OF IRON TRANSITION
GROUP ELEMENTS -U-
AUTHOR-(03)-ZHMUDSKIY, O.Z., CHESTNYKH, L.F., ERNIYAZOV, A.S.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(S), 1526-9
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--TRANSITION METAL, EMISSION SPECTRUM, TITANIUM, VANADIUM,
CHROMIUM, IRON, NICKEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/0458 STEP NO--UR/0181/70/012/005/1526/1529
CIRC ACCESSION NO--AP0135921
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135921

ABSTRACT/EXTRACT--(U) GP-0-

OF TI, V, CR, FE, AND NI.

IN ADDN. TO THE KNOWN 6 SATELLITES, 2 NEW
PAIRS AND 1 SINGLE SATELLITE WERE OBSD. THE SINGLE SATELLITE IS LOCATED
IN THE SHORT WAVELENGTH PART OF THE SATELLITE ALPHA SUB3 PRIME AND 1
PAIR BETWEEN THE SATELLITES ALPHA SUB3 AND ALPHA SUB3 DOUBLE PRIME AND
THE 2ND PAIR BETWEEN THE SATELLITES ALPHA PRIME AND ALPHA DOUBLE PRIME.

FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

USSR

UDC 621.791.75

PROLOV, V. V., FLORINSKAYA, T. YA., ZHMURKIN, YU. A., and POKHVALENSKIY,
D. YE., Moscow, Leningrad

"Hydrogen Distribution in the Heat-Affected Zone of an Alpha-Titanium Alloy
with Consideration of the Thermal Diffusion Phenomenon"

Moscow, Fizika i Khimiya Obrabotka Materialov, No 4, Jul-Aug 73, pp 134-137

Abstract: The problem of the heterogeneous distribution of hydrogen in the weld joint of an alpha-titanium alloy was examined where the distribution was formed as a result of the phenomenon of thermal diffusion. The reason for the heterogeneity of hydrogen distribution was believed to be the establishment of isosteric pressure gradients due to the temperature relationship of the solubility coefficient k in the metal, which results in pressure drops and a new hydrogen distribution in the weld joint heat-affected zone. Pipes of the alpha-titanium alloy was welded to check the theoretical data with a hydrogen content in the alloy of 0.02% and in the welding rod -- 0.002%. After welding, the hydrogen content was determined and plotted against the distance from the end of the pipe. It was found that there are two sections with an increased content of hydrogen, above that of the initial pipe. The first section is found close to fusion line (2 mm from 1/2

USSR

FROLOV, V. V., et al., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 73, pp 134-137

the center of the seam) and the second section -- in the heat-affected zone approximately 3 mm from the fusion line. The first section had a hydrogen content of just over 0.02 wt.% while the second section contained almost 0.03 wt.% hydrogen. Thus, the experimental data agree with the calculations and confirm the theoretical conclusions about the effect of thermal diffusion processes on hydrogen distribution in the heat-affected zone. Two figures, seven bibliographic references.

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USSR

UDC 547.588.1

ZHMUROVA, I. N., YURCHENKO, V. G., and YURCHENKO, R. I., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Reactions of the Substituents of Triarylphosphazobenzenes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2190-2194

Abstract: Absorption maxima in the electronic spectra of 1-phenyl-3-methyl-4-nR-benzylidenepyrazolones-5 are directly related to the reaction constants of the electron-donating substituents R. Reaction constants were calculated for several electron donating substituents of the triarylphosphazo group. The transmission factor of the grouping $-C_6H_4P=N-$ in an excited state was determined.

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USSR

UDC 546.185

YURCHENKO, R. I., and ZHMUROVA, I. N., Institute of Organic Chemistry,
Academy of Sciences Ukrainian SSR

"Influence of the Dimethylamino Group on the Auxochromic Effect of the
Phosphazo Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2635-2639

Abstract: The dimethylamino group attached directly to the phosphorus atom affects the reactivity of the phosphazo group according to its electron donor effect (σ_ϕ). Its effect on the auxochromic shift of the phosphazo group is much weaker. This could be explained by unfavorable overlap of the free electron pair of the nitrogen atom with vacant d orbitals of the phosphorus.

1/1

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USSR

UDC 547.419.1

YURCHENKO, P. I., ZHMUROVA, I. N., SHPARTUN, L. N., and KIRSANOV, A. V.,
Institute of Organic Chemistry, Academy of Sciences, Ukraine in SSR

"The Auxochromic Effect of the Triphenylphosphinomethylene Group"

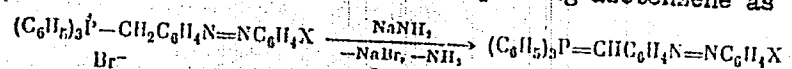
Leningrad, Zhurnal. Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2354-2359

Abstract: The wave length of maximum absorption -- in the range of 400-600 nanometers -- was measured for azobenzenes of the general formula $4,4'-YC_6H_4N \equiv NC_6H_4X$ in acetonitrile benzene and heptane. Y groups generally had the form of $(CH_3)_2N$ and various triphenylphosphine groups. The X groups were generally hydrogen or organic acids. The synthesis is given for several of these compounds not previously reported in the literature. For the Y group $(C_6H_5)_3P \equiv N$ the wave length of maximum absorption was slightly higher than or equal to compounds containing the Y group $(CH_3)_2N$; however, λ_{max} for both of these groups is significantly less than for the $(C_6H_5)_3P \equiv CH$ group. The wave length of maximum absorption was also determined for a series of azostilbenes of the form $YC_6H_4CH \equiv CHC_6H_4N \equiv NC_6H_4X$.

USSR

YURCHENKO, P. I., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2354-2359

These compounds can be prepared from the corresponding azobenzene as follows:



The λ_{max} for the azostilbenes is in general about 20 nanometers longer than the λ_{max} for the corresponding azobenzene. Preparative procedures and physical data are given.

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USSR

UDC 547.558.1

KUKHAR', V. P., ZHMUROVA, I. N., ZOLOTAREVA, L. A., and TUKHAR', A. A.,
Institute of Organic Chemistry, Acad. Sc. UkrSSR

"Basicity of Phosphazo Compounds. II. N-(4-Triphenylphosphazobenzylidene)-
anilines and Triphenylphosphazoanilines"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 8, No 4, Apr 72, pp 756-758

Abstract: 3- or 4-X-N-(4-triphenylphosphazobenzylidene)anilines are more basic than the corresponding N-(4-dimethylaminobenzylidene)anilines by about 2-3.5 pK_a units. Their basicity constants correlate with the σ° constants of the substituent X. This indicates that N-(4-triphenylphosphazobenzylidene)anilines are protonated at the triphenylphosphazo group, and N-(4-dimethylaminobenzylidene)anilines are protonated at the nitrogen atom of the CH=N group. N,N-Dimethyl-p-phenylenediamine is protonated at the dimethylamino group. Triphenylphosphazo anilines add a proton to the nitrogen atom of the triphenylphosphazo group. p-Triphenylphosphazoaniline is more basic than p-phenylenediamine (pK_a 11.85) and N,N-dimethyl-p-phenylenediamine (pK_a 13.00), but less basic than p-bis-(triphenylphosphazo)phenylene (pK_a 18.72).

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UDC 547.556:547.561+546.185

KUKHAR', V. P., ZHMUROVA, I. N., and YURCHENKO, R. I., Institute of Organic Chemistry, Academy of Sciences of the Ukrainian SSR

"Hammett Constants of the Triphenylphosphazo Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 279-281

Abstract: The experimental values of pK_a for p -(m '- and p '-triphenylphosphazophenyl)azophenols are used as a basis for calculating the values of the σ -constants of meta- and para- triphenylphosphazo groups: σ_m -0.33, σ_p -0.77. The value of the constant for the para-position is smaller than that of the dimethylamino group (-0.83), while the figure for the meta-position is somewhat larger than for the dimethylamino group (-0.211). A similar pattern is observed when σ^0 values are compared for these groups in the two positions.

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USSR

UDC 547.558.1+546.185

ZHMUROVA, I. N., YURCHENKO, R. I., KUKHAR', V. P., PETRASHENKO, A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc., Ukrainian SSR

"Protonation of Triphenylphosphazobenzene"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 5, May 71, pp 1027-1031

Abstract: 4-Triphenylphosphazobenzene (I) are protonated in alcoholic solution of 1N HCl principally at the triphenylphosphazo group. When the strength of hydrochloric acid is increased to the level of 3-6 N, the tautomeric equilibrium is shifted slightly towards the azo group salts. The differences in absorption maxima of (I) spectra taken in neutral and acid media (4N HCl) correlate with the σ^- constants of the 4'-position substituents. In comparison to 4-amino- and 4-dimethylaminoazobenzenes, the 4-triphenylphosphazobenzene are more basic by about 5-6 pKa units. Although accurate comparisons were not possible, the basicity constants of (I) type c compounds correlate with the σ^0 and σ^- constants of the substituents on the 4-position.

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USSR

UDC 547.419.1

ZHMUROVA, I. N., MARTYNYUK, A. P., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc., Ukrainian SSR

"Triphenylphosphazophenols"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 782-784

Abstract: Reaction of triphenylphosphine (I) with azidophenols yields triphenylphosphazophenols. To a solution of 0.01 g-mole of azidophenol in 15-20 ml benzene a solution of 0.01 g-mole of (I) in 10 ml benzene was gradually added. The product either precipitated at the completion of the reaction or after removal of the solvent followed by treatment with ethanol. These compounds are stable to cold water and dilute mineral acids but are easily hydrolyzed with bases. Triphenylphosphazophenols are stronger bases than the corresponding aminophenols. In a solution of glacial acetic acid o- and p-quinoneazides are converted to diazonium acetates which, when treated with sodium azide, yield azidophenols.

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USSR

UDC 547.419.1

ZHMUROVA, I. N., YURCHENKO, R. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc. Ukrainian SSR

"Auxochromic Action of the Phosphazo Group. V"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 778-781

Abstract: The reaction of triphenylphosphine with 4-azidoazobenzene or that of 4-aminoazobenzene with triphenyldibromophosphorus yields α -triphenylphosphazobenzene $p-(C_6H_5)_3P:NC_6H_4N:NC_6H_4X-p$; X, m.p. given: H, 174-176°; Cl, 174-176°; F, 175-177°; $2'NO_2$, 141.5-142.5°; NO_2 , 203-205°; OH, 221-223°; OCH_3 , 167-169°; $N(CH_3)_2$, 225-227°; $N:P(C_6H_5)_3$, 272-273°; and CH_3 , 167-168°. In these compounds the triphenylphosphazo group has a definite effect on the color, similar to the effect of the dimethylamine group in 4-dimethylaminoazobenzenes. The reaction of sodium azide with diazo-4-aminoazobenzene or 4,4'-diaminoazobenzene gave the corresponding 4-azido and 4,4'-diazidoazobenzenes $p-N_3C_6H_4N:NC_6H_4X-p$; X and m.p. given: $2'NO_2$, 112-114°; NO_2 , 131-132°; OH, 125-127°; $N(CH_3)_2$, 128-130°; and N_3 , 139-141° (d).

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USSR

UDC 547.558.1

ZHMUROVA, I. N., TOLMACHEV, A. I., YURCHENKO, R. I., and SLOMINSKIY, Yu. L.,
Institute of Organic Chemistry, Ukrainian Academy of Sciences

"The Auxochromic Action of the Phosphazo Group"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2553-2557

Abstract: In various symmetrical and asymmetrical thiocarbocyanines, styryls and merocyanines tested, it was found that the triphenylphosphazo group has the same auxochromic effect as the dimethylamino group.

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USSR

UDC 547.558.1

ZHMIROVA, I. N., TUKHAR', A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Acad. Sc. Ukrainian SSR

"Triphenylphosphazooanilines"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 785-791

Abstract: Triphenylphosphazooanilines (I) -- usually light yellow crystalline compounds -- are obtained through oxidative imine formation, by treating triphenylphosphine with azidoanilines. They are stable in air, give picrates with picric acid and dissolve in dilute mineral acids without decomposition. Hot mineral acids and bases hydrolyze (I) to corresponding phenylenediamines. p-Triphenylphosphazooaniline reacts with aromatic aldehydes and sodium nitrite yielding triphenylphosphine oxides and diarilidene-p-phenylenediamine. Arylidene-p-triphenylphosphazooanilines containing no dimethylamine groups in the arylidene ring were obtained from azidoanilines converted to arylideneazidoanilines, which then were condensed with triphenylphosphine.

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USSR

UDC 546.185:541.651.2

KUKHAR', V. P., PETRASHEKNO, A. A., ZHMUROVA, I. N., TUKHAR', A. A.,
SOLODUSHENKOV, S. N., Institute of Organic Chemistry, Kiev,
Academy of Sciences Ukrainian SSR

"Basicity of Phosphazo Compounds. I"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70,
pp 1696-1699

Abstract: m-Triphenylphosphazobenzoic acid and its methyl ester, melting at 199-201° and 126-127°, respectively, were synthesized by adding triphenylphosphine to a hot solution of the parent acid or ester in benzene and collecting the product precipitated from the cooled mixture. The p-triphenylphosphazobenzoic acid was obtained analogously with reversed addition of the reagents; the product melted at 241-243°C. To obtain triphenylphosphazo-p-trifluoromethylsulfonylbenzene, m.p. 157-159°, triphenylphosphine was added to the benzene solution of p-trifluoromethylsulfonylazido-benzene. A solution of p-trifluoromethylsulfonylaniline in dilute hydrochloric acid was diazotized, and a solution of sodium azide

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USSR

KUKHAR', V. P., et al, Zhurnal Obshchey Khimii, Vol 40, No 8, Aug 70, pp 1696-1699

was added gradually, yielding p-trifluoromethylsulfonylazidobenzene, m.p. 53-55°. Other compounds were obtained by known methods. Their pK values for basic and acidic ionization were determined. It was found that the substituents on the phenyl ring show principally an inductive effect on the reactive center of the tri-phenylphosphazoarenes. The m-triphenylphosphazo group is a greater electron donor than the m-dimethylamino group, and the p-triphenylphosphazo group is a slightly lesser electron donor than the p-dimethylamino group. In 95% alcohol the m- and p-triphenylphosphazobenzoic acids exist to a considerable degree as internal salts.

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USSR

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UDC 547.558.1

ZHMUROVA, I. N., YURCHENKO, R. I., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Auxochromic Action of Phosphazo Group. III"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 982-986

Abstract: The condensation of p-triphenylphosphazobenzaldehyde or p-triphenylphosphazobenzalaniline with quaternary salts of nitrogen heterocycles, 1-phenyl-3-methyl-5-pyrazolone and N-ethylrhodanine gives salt-like or intramolecular dyes. The auxochromic action of the phosphazo group in these dyes resembles the action of the classical auxochrome -- the dimethylamino group.

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USSR

UDC 547.558.1

ZHMUROVA, I. N., TUKHAR', A. A., and KIRSANOV, A. V., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Phosphazoaldehydes and Phosphazoketones. II"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 986-991

Abstract: The interaction of azidoketone oximes and p-azidobenzylideneanilines with triphenylphosphine gives triphenylphosphazoketone oximes and p-triphenylphosphazobenzylideneanilines. The synthesis of phosphazoketone oximes and p-triphenylphosphazobenzylideneanilines directly from p-triphenylphosphazobenzaldehyde and phosphazoketones is complicated by side reactions on the phosphazo group.

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USSR

UDC 546.185

ZHMUROVA, I. N., KUKHAR', V. P., TUKHAR', A. A., ZOLOTAREVA, L. A.

"Mutual Effect of Substitutions in Triphenylphosphazo Benzenes"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 82-86

Abstract: A study was made of the mutual effect of substitutions in triphenylphosphazo benzenes. The basicity constant of the triphenylphosphazo benzenes $(C_6H_5)_3P = NC_6H_4X$ and analines $XC_6H_4NH_2$ are correlated identically satisfactorily with σ^0 , σ and σ^- by the constants of the substitutions X. In contrast to the diethylamino and the amino groups, the triphenylphosphato group has a positive induction effect. The following tables of values are presented: 1) the parameters of the correlation equations pK_a -- the constants σ^0 , σ and σ^- for triphenylphosphazo benzenes $(C_6H_5)_3P = NC_6H_4X$ calculated by the data of V. P. Kukhar', et al., [ZhOKh, No 40,

1696, 1970], the more exactly defined parameters of the correlation equations pK_a -- constants σ^0 , σ and σ^- , the parameters of the correlation

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ZHMUROVA, I. N., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 82-86

equations pK_a -- constants σ^0 , σ' and σ^- for triphenylphosphazo benzyli-
denanilines n , $n'-(C_6H_5)_3P=NC_6H_4CH=NC_6H_4X$ in nitromethane, the parameters
of the correlation equations pK_a -- constants σ^0 , σ' and σ^- for analines
 $NH_2C_6H_4X$, the reaction constants of the triphenylphosphazo group in alcohol
and nitromethane by the equations of M. I. Kabatschnik [Phosphorus, No 1,
117, 1971], the Hammett constants and the components σ_n of the constants
of the groups $(C_6H_5)_3P=N-$, $(CH_3)_2N-$, the basicity constants of the triphenyl-
phosphazo-n-binyll benzenes $(C_6H_5)_3P=NC_6H_4CH=CHX$ in nitromethane (95% alcohol)
and σ_n^0 substitution constants in nitromethane (95% alcohol) calculated by
 pK_a of triphenylphosphazo benzenes $(C_6H_5)_3P=NC_6H_4X$.

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USSR

UDC 546.185

ZHMUROVA, I. N., YURCHENKO, V. G.

"Linear Dependence of the Absorption Peaks of the Electron Spectra of Triarylphosphazo Compounds on $\sum \sigma_p$ of the Aryl Radicals"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (GV), No 1, 1973, pp 86-90

Abstract: The presence of a linear relation between $\nu_{\max}$ of the long wave $\pi - \pi^*$ bands of the electron spectra of triarylphosphazo benzenes, $(n-RC_6H_4)'n-R''C_6H_4) (n-R'''C_6H_4)P=NC_6H_4X-n$ and $\sum \sigma_p$ of the aryl radicals (see also [I. N. Zhmurova, et al., ZhOKh, Vol 42, No 12, 1972]) opens up the possibility of calculating σ_p of different substituted phenyls. In order to determine the accuracy of calculating σ_p of the aryl radicals by the values of $\nu_{\max}$ of the triarylphosphazobenzenes, these values were calculated for groups with sharply differing values of σ_p -- $CF_3C_6H_4$ and $(CH_3)_2NC_6H_4$. The parameters of the correlation equations reflecting the linear dependence of $\nu_{\max}$ of a series of triarylphosphazo compounds on $\sum \sigma_p$ of the aryl radicals

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ZHMUROVA, I. N., and YURCHENKO, V. G., et al., Zhurnal Obshchey Khimii,
Vol XLIII (CV), No 1, 1973, pp 86-90

cals are tabulated. The experimental procedures for obtaining 16 of the
compounds are given.

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USSR

ZHMUROVA, N. I.

UDC 539.3:534.1

"Oscillations of a Circular Plate of Nonlinearly Elastic Materials"

Sb. tr. Mosk. inzh.-stroit. in-t (Collection of Works of Moscow Structural Engineering Institute), 1970, No. 84, pp 280-284 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V249)

Translation: Forced standing oscillations of a plate are investigated when there is a nonlinear dependence between stresses and deformations $\sigma_i = E e_i - m e_i^3$. A nonlinear differential equation is obtained relative to the generalized coordinate $T(t)$ which with the aid of the approximation $T(t) = A \cos \beta t$ is reduced to a system of two algebraic equations. Numerical results were obtained for the cases $n = 1$ and $n = 2$, where n is the number of nodal diameters. It is shown that as n increases, the degree of curvature of skeleton curves rises and the value of the minimum deflection decreases. A. D. Lizarev.

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USSR

UDC: None (1)

KOVALENCHIK, D. I., LEONT'YEV, A. I., TIKHOMIROV, D. A., ZHMUROVA,
S. V., and YURCHENKO, A. I.

"Memory Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovar-
nyye znaki, No 14, 1973, p 145, No 373717

Abstract: This analog-type memory device using a selsyn pickup has the distinguishing feature of having the program carrier fixed to the selsyn shaft, with the perforator and counting element on the opposite side of the carrier disc. The effect of this arrangement is to simplify the device.

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1/2 C16 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DEPENDENCE OF THE DISTRIBUTION OF AN IMPURITY ON GROWTH RATE DURING
THE CRYSTALLIZATION OF ISOMORPHIC SYSTEMS FROM SOLUTION -U-
AUTHOR--(02)-ZHMUROVA, Z.I., KHAYMOVNALKOV, V.YA.
COUNTRY OF INFO--USSR 2
SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 136-41
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--CRYSTALLIZATION, CRYSTAL IMPURITY, ZINC COMPOUND, NICKEL
COMPOUND, POTASSIUM COMPOUND, SULFATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0905 STEP NO--UR/0070/70/015/001/0136/0141
CIRC ACCESSION NO--AP0116415
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0116415

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION COEFF., K OF AN IMPURITY BETWEEN THE LIQ. AND SOLID PHASE DURING CRYSTN. IN THE ISOMORPHIC SYSTEM ZNK SUB2(SO SUB4) SUB2.6H SUB2 O-NIK SUB2 (SO SUB4) SUB2.6H SUB2 O WAS STRONGLY DEPENDENT ON THE DEGREE OF SUPERSATN. BUT, AT CONST. SUPERSATN., PRACTICALLY INDEPENDENT OF THE RATE OF STIRRING, CONC. OF THE IMPURITY (NI PRIME2POSITIVE), AND THE VISCOSITY OF THE SOLN., WHICH HOWEVER, STRONGLY AFFECTED THE RATE OF GROWTH OF THE (110) FACE OF THE CRYSTALS. THE INDEPENDENCE OF K AND THE GROWTH RATE SHOWS THAT THE INCLUSION OF THE IMPURITY INTO THE CRYSTAL IS GOVERNED BY EXCHANGE PROCESSES WHICH TAKE PLACE BETWEEN THE SURFACE LAYER OF THE CRYSTAL AND THE SOLN. LAYER ADHERING TO IT. FACILITY: INST, KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DISTRIBUTION OF ISOMORPHIC IMPURITIES DURING CRYSTALLIZATION FROM
AQUEOUS SOLUTIONS -U-
AUTHOR--(02)--ZHPUROVA, Z.I., KHAYMOVMAKOV, V.YA.
COUNTRY OF INFO--USSR 2
SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 142-8
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--CRYSTALLIZATION, AQUEOUS SOLUTION, ALUMINUM COMPOUND, ZINC
COMPOUND, AMMONIUM COMPOUND, CRYSTAL IMPURITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/0904 STEP NO--UR/0070/70/015/001/0142/0148
CIRC ACCESSION NO--AP0116414
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0116414

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE DISTRIBUTION OF ISOMORPHIC IMPURITIES DURING CRYSTN. FROM AQ. SOLNS. ON THE DEGREE OF SUPERSATN., TEMP., CONC. OF THE IMPURITY, AND THE GROWTH RATE OF A GIVEN CRYSTAL FACE WAS STUDIED FOR THE FOLLOWING SYSTEMS: (1) ALK(SO SUB4) SUB2.12H SUB2 O-CRK(SO SUB4) SUB2.12H SUB2 O; (2) AL(NH SUB4)(SO SUB4) SUB2.12H SUB2 O-ALK(SO SUB4) SUB2.12H SUB2 O; (3) K SUB2 SO SUB4-K SUB2 CRO SUB4; (4) ZN(NH SUB4) SUB2 (SO SUB4) SUB2.6H SUB2 O-NI(NH SUB4) SUB2(SO SUB4) SUB2.6H SUB2 O; (5) ZN(NH SUB4) SUB2 (SO SUB4) SUB2.6H SUB2 O. THE FOLLOWING CONCLUSIONS WERE MADE: (1) IF THE IMPURITY IS MORE SOL. THAN THE BASIC SUBSTANCE, THE DISTRIBUTION COEFF. K IS SMALLER THAN 1, WHEREAS K IS GREATER THAN 1 FOR LESS SOL. IMPURITIES; (2) THE INCLUSION OF THE IMPURITY IN THE CRYSTAL DECREASES WITH DECREASING DEGREE OF SUPERSATN. IN SYSTEMS WITH K SMALLER THAN 1 AND INCREASES IN SYSTEMS WITH K GREATER THAN 1; (3) THE DISTRIBUTION OF ISOMORPHIC IMPURITIES IS DEPENDENT OF THE GROWTH PYRAMID OF A GIVEN FACE. (4) THE BERTHELOT NERNST LAW FOR ISOMORPHIC SYSTEMS HOLDS OVER A WIDE RANGE OF CONCNS. AND SUPERSATNS., EVEN UNDER NONEQUIL. CONDITIONS; (5) THE DIFFERENCE IN THE INCLUSION OF THE IMPURITY BETWEEN THE GROWTH PYRAMIDS INCREASES WITH INCREASING IMPURITY CONC. AND (6) NO DIRECT RELATION EXISTS BETWEEN THE GROWTH RATE OF A GIVEN CRYSTAL FACE AND THE INCLUSION OF THE IMPURITY. FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.96:681.32

ZHODZISHSKIY, A. I., KIY, A. A.

"Utilizing the Envelope in Measuring the Phase and Frequency of a Harmonic Signal in the Presence of Noise"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970, vyp. 201, pp 99-112 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G22)

Translation: The use of digital computers for processing radio signals is becoming ever more commonplace in measurements in radar and radio navigation systems. The authors feel that digital computer processing of the so-called phase signal obtained from the received signal by certain linear transformations is preferable to processing the entire signal in measuring the phase and frequency of a radio signal. Two methods of processing are considered -- with and without the use of a reference voltage having a frequency close to or equal to that of the signal. It is shown that measurement precision can be improved when the information included in the envelope of the radio signal is utilized. Five illustrations, bibliography of five titles. N. S.

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1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DETERMINATION OF THE CONTENT OF SOME ELEMENTS IN SYNTHETIC FIBERS
WITH RADIOACTIVE ISOTOPES -U-
AUTHOR--(04)-VOLF, L.A., KHISLAVSKIY, A.G., PLOTNIKOV, R.I., ZHODZISHSKIY,
G.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLOKNA 1970, (2), 32-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--SYNTHETIC FIBER, RADIOACTIVE ISOTOPE, CADMIUM ISOTOPE, X RAY
ABSORPTION, SCINTILLATION COUNTER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0041 STEP NO--UR/0183/70/000/002/0032/0033
CIRC ACCESSION NO--AP0132336
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132336

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENT OF SOME ELEMENTS (HAVING AN AT. NO. GREATER THAN OR EQUAL TO 16) IN SYNTHETIC FIBERS WAS DETD. FROM X RAY ABSORPTION DATA. THE EXPTS. WERE CONDUCTED IN AN X RAY PHOTOMETER, USING PRIME 109 CD AS AN IRRADN. SOURCE AND SCINTILLATION COUNTER AS A DETECTOR. THE METHOD WAS RAPID (5 MIN) AND ACCURATE.

FACILITY: LITLP IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 010
UNCLASSIFIED
TITLE--(BRIBERY VESTIGE OF PRIVATE OWNERSHIP PSYCHOLOGY) BRIBERY ON TRIAL
AUTHOR--ZHOGIN, N. Z
COUNTRY OF INFO--USSR
SOURCE--MOSCOW IZVESTIYA 14 MAR 70 MORNING EDITION P 5 L
DATE PUBLISHED--14MAR70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--ADVANCED ACADEMIC INSTITUTION, ENTRANCE REQUIREMENT, ACADEMIC
INSTITUTION ADMINISTRATION, PERSONNEL CHANGE, ACADEMIC INSTITUTION
EVALUATION, TECHNICAL INSTITUTE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1260 STEP NO--UR/9003/70/000/000/0005/0005
CIRC ACCESSION NO--AN0101397
UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AN0101397
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

GENERAL N. ZHOGIN: "BRIBERY ON TRIAL". (ARTICLE BY USSR PROSECUTOR IN THE ENTRANCE EXAMINATIONS TO ODESSA TECHNOLOGICAL INSTITUTE HIGHER EVALUATIONS WERE ILLEGALLY GIVEN TO RELATIVES OF INSTITUTE WORKERS AND ACQUAINTANCES. THE INSTITUTE'S FORMER SENIOR ENGINEER ZAVADSKAYA, WHO WAS VIRTUALLY HEAD OF THE SELECTION COMMITTEE, WITH THE KNOWLEDGE OF THE INSTITUTE'S RECTOR PLATONOV (HE HAS BEEN REMOVED FROM HIS POST) AND HIS DEPUTY, GAVE THE EXAMINERS A LIST ON WHICH CERTAIN NAMES WERE MARKED WITH A TICK: THESE PEOPLE HAD TO BE GIVEN A HIGHER EVALUATION. AT FIRST THIS WAS APPLIED ONLY IN CASES OF ACQUAINTANCES. AND THEN WITH A GROWING DISREGARD FOR THE LAW AND BECOMING MORE RECKLESS ZAVADSKAYA BEGAN INCLUDING IN THE LISTS PEOPLE FROM WHOM SHE AND HER CONFEDEARATES HAD RECEIVED LARGE BRIBES. NATURALLY, EVERY TICK CLOSED THE DOOR OF THE HIGHER EDUCATIONAL INSTITUTION TO MORE ABLE YOUNG MEN AND WOMEN. THE PEOPLE WHO TOOK BRIBES HAVE NOT BEEN CONVICTED. BUT THE MATTER DOES NOT END THERE. FOR THE INSTITUTE'S LEADERS, WHOSE JOB IT WAS TO INSTILL IN THE RISING GENERATION A RESPECT FOR SOVIET LAWS, THEMSELVES CONSIDERED IT POSSIBLE TO FLAGRANTLY AND SYSTEMATICALLY INFRINGE THEM. THIS IS NOT THE ONLY CASE WHERE INFRINGEMENT OF SOVIET LAWS CREATED FAVORABLE GROUNDS FOR BRIBE TAKING. THE STRUGGLE TO ELIMINATE BRIBERY IS CLOSELY LINKED WITH FURTHER STRENGTHENING LAW AND ORDER AND LEGALITY, AND WITH EXERCIZING STRICT CONTROL OVER ACCEPTANCE OF CITIZENS FOR HIGHER EDUCATIONAL INSTITUTIONS, OVER ALLOCATION OF LIVING SPACE, AND SO FORTH. OF COURSE SUCH CONTROL EXISTS. UNFORTUNATELY, IT SOMETIMES BEARS A PURELY FORMAL CHARACTER.

UNCLASSIFIED

USSR

ZHOGOLEV, Ye. A.

UDC: 8.74

"Report on the SIBESM-6 Autocode"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collected Works of the Computing Center at Moscow University), 1971, vyp. 17, pp 154-182 (from RZh-Kiber-netika, No 5, May 72, Abstract No 5V522)

Translation: The paper describes the SIBESM-6 symbolic coding language (autocode) of the system of modular programming for the BESM-6 computer (SIMPR BESM-6). This language is a mapping of the internal language for the SIMPR BESM-6. The syntax of the language is described by means of the metalinguistic formulas used in describing ALGOL-60. Bibliography of eleven titles. V. Mikheyev.

USSR

UDC: 8.74

PASKHIN, Ye. N., ~~ZHOGOLEV, Ye. A.~~

"Specific Representation of the SIMPR Internal Language on the BESM-6"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collected Works of the Computing Center at Moscow University), 1971, vyp. 17, pp 149-153 (from RZh-Kiber-netika, No 5, May 72, Abstract No 5V521)

Translation: The paper describes the specific representation of the internal language for a system of modular programming (SIMPR) for the BESM-6 computer. A representation is given of the principal symbols of the internal language which are used in defining the lines of tables of descriptions and pseudocommands. A line of the table of descriptions in the computer takes up a single machine word, and a pseudocommand takes up two machine words.

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USSR

UDC: 8.74

ZHOGOLEV, Ye. A.

"The SIMPR Internal Language"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collected Works of the Computing Center at Moscow University), 1971, vyp. 17, pp 127-148 (from RZh-Kiber-netika, No 5, May 72, Abstract No 5V520)

Translation: An internal language for a system of modular programming (SIMPR) is described. The internal language is the output language of a series of translators in the SIMPR system, and assumes that each program has a modular structure. Each module presents a parametric text which gives the value of the subprogram and certain additional information which defines the process of formation of the values of the parameters or the values of certain objects which are accessible in this subprogram. Each parameter is a conventional address. The SIMPR internal language is based on a special scheme of memory distribution and is synthesized in such a way as to enable debugging of the subprogram in a single inspection of its text and supplementary information to the text. Subprograms in the internal language are stored in a library with which a catalog is associated containing information on the structure of the subprograms. A special fea-

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USSR

ZHOGOLEV, Ye. A., Sb. rabot Vychisl. tsentra Mosk. un-ta, 1971, vyp. 17, pp 127-148

ture of the language is the possibility of maintaining correspondence between the original (external) designations of the objects and their designations in the internal language since any subprogram can also be presented in autocode as well by using designations introduced by programmers in the initial language, and likewise the program can be debugged in terms of these original designations. It is noted that although the SIMPR internal language has been developed for use in the BESM-6 computer, it can be readily converted to other computers as well. Therefore the language is described in a form which does not depend on the specific features of the computer. V. Mikheyev.

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USSR

UDC: 8.74

ZHOGOLEV, Ye. A., KABANOV, M. I.

"Basic Features of the UNIOS-68 Operational System"

Sb rabot. Vychisl tsentra Mosk. un-ta (Collected Works of the Computing Center at Moscow University), 1971, vyp. 17, pp 39-64 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V529)

Translation: The paper describes the UNiversity Operational System (UNIOS-68) which is directly related to the SIMPR modular programming system. The UNIOS-68 consists of a set of programs which control the process of using a computer for analyzing data and for preventive monitoring of its operability. The system is a component part of the corresponding data processing system which also includes: the computer itself including all data input/output facilities; facilities for storing and reproducing information, including accumulators on magnetic tapes, punchcards, etc.; the system of rules for using the devices of the machine, which determines start-up operation and stop of the data processing system; the persons who service the machine on the basis of these rules. The UNIOS-68 is designed for operation both in the mode of packet processing of data, and in the time-sharing mode. The mode of packet processing of data is understood to mean the mode of oper-

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USSR -

ZHOGOLEV, Ye. A., KABANOV, M. I., Sb. rabot Vychisl. tsentra Mosk. un-ta,
1971, vyp. 17, pp 39-64

ation where the assignments of users, pregroupped into packets, are introduced into the data processing system by packets by an operator, and are carried out without the direct intervention of the users during the process of completion. The time-sharing mode is understood to mean a mode of operation of the system where several assignments of users are in process of execution. Each of these assignments is introduced into the data processing system from a user terminal, and is carried out under conditions of periodic allocation of some time of operation of the central processor to each of the assignments being executed, and with the possibility of direct intervention of the user in the process of execution of his own assignment. UNIOS-68 has a library which consists of data blocks (a library of modules), their nomenclatures, library resources and catalogs containing brief characteristics of the library modules and their arrangement in the library resources. V. Mikeyev.

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USSR

UDC: 8.74

ZHOGOLEV, Ye. A., KABANOV, M. I., TRIFONOV, N. P.

"Types of Quantities of the SIMPR System and Their Representation on the BESM-6"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collected Works of the Computing Center at Moscow University), 1971, vyp. 17, pp 90-116 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V530)

Translation: The initial set of forms of quantities processed in the SIMPR modular programming system is defined. The representation of these types of quantities on the BESM-6 computer is given. It is noted that the inclusion of any new algorithmic language in the SIMPR system requires definition of new forms of SIMPR quantities. The designations introduced for types of SIMPR quantities are recommended as standard for use in any scientific and procedural materials on the SIMPR system. V. Mikhayev.

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USSR

UDC: 8.74

ZHOGOLEV, Ye. A.

"System of Modular Programming (SIMPR)"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collected Works of the Computing Center at Moscow University), 1971, vyp. 17, pp 65-89 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V532)

Translation: The SIMPR modular programming system is described. A programming system is understood to mean a set of rules for describing processes of data analysis and facilities which realize these processes in data processing systems. Modular programming is understood to mean a method of compiling programs in which each program is considered to be made up of several parts (modules), and each of these modules can be independently compiled, translated and debugged. The basic concepts and definitions of the SIMPR are given: quantities and their forms, reduction of quantities, objects of a process. A detailed exposition is given of the structure of programs in SIMPR, subprograms and algorithmic languages, resources of the processes in SIMPR, the SIMPR internal language, and autocode.

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USSR

UDC: 8.74

ZHOGOLEV, Ye. A., RAU, O. I.

"Principles of Optimum Distribution of Memory"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collected Works of the Computing Center at Moscow University), 1971, vyp. 17, pp 18-36 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V531)

Translation: The paper discusses problems of allocating various parts of programs and the data used in executing these programs in the memory of digital computers during execution of each program. Optimum memory distribution is understood to mean memory utilization such that first of all the possibility of compiling both maximum-speed programs and fairly general-purpose programs is retained, and secondly, the most economic use of the memory is ensured in carrying out the first requirement. Optimum memory distribution is based on a combination of automatic methods of allocating program parts and various data groups in the memory with the participation of programmers in isolating the parts and data groups, and also in selecting the appropriate method of allocation in the memory for each of them. In addition, the memory distribution scheme is constructed with regard to a certain program concept which has a pattern of relatively independent compilation of the individual parts of the program. During its execution, each

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ZHOGOLEV, Ye. A., RAU, O. I., Sb. rabot Vychisl. tsentra Mosk. un-ta, 1971, vyp. 17, pp 18-36

program generates a certain data analysis process which in the computer is a certain set of machine words called values. The values are related to certain objects of the process. An object of the process is understood to mean something whose content is a value; this content may vary in this process. It is noted that the given scheme of memory distribution is part of the modular programming system. V. Mikheyev.

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USSR

UDC 8.74

PASKHIN, YE. N., and ~~ZHOGOLEV, YE. A.~~

"Concrete Representation of Internal SIMPR [Modular Programming System]
Language on BEMS-6"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collection of Works of Computer Center
of Moscow University), 1971, vyp. 17, pp 149-153 (from RZh-Matematika, No 5,
May 72, Abstract No 5V521)

Translation: The article describes the concrete representation of the Internal
SIMPR Language for the BEMS-6 computer. The authors give the representation of
the basic Internal Language symbols used in the determination of rows of
description tables and pseudo instructions. A row of the description table
takes one machine word in the computer, while a pseudo instruction occupies
two machine words.

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SSR:

UDC 8.74

ZHOGOLEV, YE. A.

"Internal Language of SIMPR [Modular Programming System]:

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collection of Works of Computer Center of Moscow University), 1971, vyp. 17, pp 127-148 (from Izh-Matematika, No 5, May 72, Abstract No 5V520 by V. MIKHEYEV)

Translation: The article describes the internal language of SIMPR. The internal language is the object language of a number of SIMPR translators and assumes that each program has a modular structure. Each module represents a parametric text, giving the value of the subroutine and certain additional information defining the process whereby the values of parameters or values of certain objects accessible in this subroutine are formed. Each parameter is a conditional address. The internal SIMPR language is based on a special memory distribution circuit and is so constructed as to permit loading of the subroutine in one scanning of its text and of supplemental data accompanying this text. The subroutines in the internal language are stored in a library, with which a certain catalog containing data about the structure of the subroutines is connected. A distinctive feature of the internal language is the possibility of preserving the correspondence between the original (external) names of objects

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USSR

ZHOGOLEV, YE. A., Sb. rabot Vychisl. tsentra Mosk. un-ta, 1971, vyp 17,
pp 127-148

and their designations in the internal language so that any subroutine can also be represented in autocode using the designations introduced by the programmer in the initial language; at the same time, the subroutine can be debugged in terms of these original designations. It is noted that although the internal SIMPR language was devised for use on the BESM-6 computer, it can easily be applied to other computers. Therefore, the description of the language is given in a form which does not depend on the distinctive features of a machine.

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USSR

UDC: 8.74

ZHOGOLEV, Ye. A., TRIFONOV, I. P.

"A Course in Programming. Textbook for University Students. Third Revised Edition"

Kurs programmirovaniya. Uchebn. posobiye dlya stud. un-tov. Izd. 3-ye ispr.
(cf. English above), Moscow, "Nauka", 1971, 400 pp, ill. 1 r. 3 k. (from
RZh-Kibernetika, No 1, Jan 72, Abstract No 1V949 K)

[No abstract]

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USSR

UDC: 681.3

BRUSENTOV, N. P. ~~ZHOGOLEV, Ye. A.~~

"Structure and Operating Algorithm of a Small Computer"

V sb. Vychisl. tekhn. i voпр. kibernet. (Computer Technology and Problems of Cybernetics--collection of works), vyp. 8, Leningrad, Leningrad University, 1971, pp 34-51 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V889)

Translation: The authors give an algorithmic description of a variant of the structure and system of commands of a small automatic digital computer, the "Setun'-70", whose distinguishing features are: memory addressing by syllable, Polish inverse recording as the internal language of the machine, use of magazine organization of memory in operation of the processor, a two-level system of operations, two-level backing store memory organization, a special system of interruption. A somewhat expanded ALGOL-60 is used as the language for describing operation of the "Setun'-70" computer. A detailed analysis of the algorithm is given with semantic interpretation of its objects. V. Mikheyev.

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USSR

UDC: 621.396.677.01

ZHOGLEV, Ye. A., ANTROPOV, N. I.

"Some Methods of Cutting Down the Effect of Phase Errors on the Radiation Patterns of Antennas Made up of Line Radiators With a Traveling Wave"

V sb. Antenny (Antennas-collection of works), Vyp. 9, Moscow, "Svyaz'", 1970, pp 31-52 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12B5)

Translation: The authors investigate the effect which oncoming phase errors have on the radiation patterns of antennas which are made up of a single type of line radiators with a traveling wave. The radiation pattern is statistically evaluated for an antenna synthesized by first breaking up all its line radiators into a series of sections (zones), and then reshaping but this time with regard to the magnitude and sign of the phase distribution scatter in the zones (random pattern), and this pattern is also compared with the radiation patterns of ordinary antennas (without shaping). The radiation pattern is evaluated for different phase errors and for different numbers of divisions (zones) of the line radiators. On the basis of the statistical approach to the problem, final expressions are found for the average radiation pattern with respect to power, which can be used to estimate the error reduction in most of the cases which are encountered in practice. Ten illustrations, bibliography of two titles. Resumé.

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USSR

UDC 619:616.981.452:636.4

KUSHNIR, A. T., BURTSEV, V. I., BONDARENKO, I. M., ZHOGOLEVA, S. P.,
SERGEYEV, V. A., FISENKO, O. F., ORLOV, V. A., and TROIAN, N. D., All
Union Scientific Research Institute of Veterinary Virology and Micro-
biology

"Aerosol Vaccination of Swine Against Swine Fever"

Moscow, Veterinariya, No 10, Oct 70, pp 50-52

Abstract: Cultural vaccine prepared from the 31st passage of the lapinized K strain of swine fever virus in a culture of lamb testicular cells and concentrated 10-fold was highly immunogenic in gilts and piglets vaccinated by the aerosol method. Exposure of the animals for 5 minutes to vaccine diluted 1:1000 with physiological solution conferred stable immunity on 50% of the gilts and 100% of the piglets. Even in a dilution of 1:10,000, the vaccine produced immunity in a number of the animals. The immunizing dose (ImD_{50}) of the vaccine applied via aerosol was equivalent to 7.25 intramuscular ImD_{50} for gilts and 5.25 ImD_{50} for piglets. Clinical-hematological and biochemical studies of the vaccination process showed that the time at which the immunological reaction occurred and its intensity were the

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USSR

KUSHNIR, A. T., et al, Veterinariya, No 10, Oct 70, pp 50-52

same, regardless of the method of vaccination. The degree of decrease in immunogenic activity of the vaccine in the process of atomization was less than 54.2% for one of the vaccines tested.

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USSR

KATINAS, V. I., ZHOGZHDA, I. I., ZHUKAUSKAS, A. A.,

"Study of Local Heat Emission of a Plate in a Transient Flow Mode"

Tr. AN Lit SSR [Works of Academy of Sciences] Lithuanian SSR, 1971, B, No 2(65), pp 161-171. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1, 1972, Abstract No 1B826 by L. M. Zysina-Molozhen).

Translation: Results are presented from an experimental study of the transient area of a thermal boundary layer over a plate in a stream of air (Prandtl number $P_f=0.7$), water ($P_f=3.5, 6.5$) or transformer oil ($P_f=108.5, 262.3$). The experimental plate was 725 mm long, electrically heated, and was covered with a network of copper-constantan thermocouples with a spacing of 15 mm. Heat flux q_w was held constant along the entire surface; the R_x number was varied between 10^3 and $1.4 \cdot 10^6$; the temperature drop $\Delta t=6-27^\circ$. Development of a transition was determined by the changing nature of the dependence of the local heat emission coefficient $\alpha_x=\alpha(x)$.

The experiments indicated a significant influence of the P number on the value of the R number, corresponding to the beginning of the transition from laminar to turbulent flow in the boundary layer (R_{fk}). When P_f was changed from 0.7 to 262, the value of R_{fk} decreased by approximately 6 times. Based on a generalization of their experimental data, the authors suggest an empirical

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UDC 617.7:611-018]:541.18:047.6-092.9

ZHOKHOV, V. P., SYNGAYEVSKAYA, V. A., IGNAT'YEVA, O. S., and SINENKO, G. F.,
Doctors, Military Medical Academy imeni S. M. Kirov

"Biochemical Shifts in Eye Tissues Exposed to Laser Radiation"

Odessa, Oftal'mologicheskii Zhurnal, Vol 26, No 4, 1971, pp 273-277

Abstract: A study was made of biochemical shifts in the tissues of the eye (cornea, anterior chamber, lens, and retina) following irradiation with a pulsed ruby laser. Tests were made on 90 rabbits, while 31 control animals received no radiation. A parallel beam was applied on the cornea with energy of 0.5 joule per square centimeter. With energy densities of 0.6, 0.3, and 0.1 joule per square centimeter on the cornea, an additional optical attachment was placed before the irradiated eye which produced an increased "spot" on the retina (d = 4-5 millimeter). After irradiation, ophthalmoscopy was done on several animals from each series, with the foci measured and fundi photographed. The concentration of sodium and potassium was markedly changed in all eye segments; the level of ascorbic acid shifted markedly in the lens and less so in other segments. Reliable shifts were observed in the SH group content in the lens and retina, and the cholinesterase activity increased

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USSR

ZHOKHOV, V. P., et al., Oftal'mologicheskiy Zhurnal, Vol 26, No 4, 1971, pp 273-277

with energy density of 0.6 joule per square centimeter $\times 3$ on the retina. Test results demonstrated that shifts from the effect of the laser beam may be possible not only in the focus of radiation damage, but in adjacent sectors.

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USSR

UDC 617.7-007.681-039.31-02:550.38

ZHOKHOV, V. P., Candidate of Medical Sciences, and INDEYKIN, Ye. I., Candidate of Medical Sciences, Chair of Ophthalmology, Military Medical Academy imeni S. M. Kirov, Leningrad

"Relationship Between Acute Attacks of Glaucoma and Variations in the Magnetic Field of the Earth"

Moscow, Vestnik Oftal'mologii, No 5, Sep/Oct 70, pp 29-30

Abstract: The relationship between acute attacks of glaucoma and variations in the earth's magnetic field was studied on the basis of 1,304 requests for aid in acute attacks of primary glaucoma at the emergency clinic of the Leningrad City Ophthalmological Hospital between 1961 and 1967. The number of such attacks treated per year varied from 154 to 216 and showed a direct relationship to the planetary index of magnetic activity. Medical aid in connection with acute attacks of glaucoma was sought on 916 days, while there were no requests for such aid on 1,640 days. On the days when attacks were reported, the mean amplitude of the horizontal component of the geomagnetic field was lower by 1.3 gamma than on the days when no attacks occurred. Decompensation

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USSR

ZHOKHOV, V. P., and INDEYKIN, Ye. I., Vestnik Oftal'mologii, No 5, Sep/Oct 70,
pp 29-30

in the glaucoma process is evidently affected either directly or indirectly
(through variations in meteorological conditions) by the state of the earth's
magnetic field.

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Acc. Nr. **AP0036528**

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,
pp 49-55

STUDY OF STRUCTURE FORMATION IN AQUEOUS CASEIN SOLUTIONS
Zholbolsynova, A. S.; Izmaylova, V. H.; Pankratova, M. N.

Summary

Structures formation in aqueous alkaline casein solutions involves disordering of casein molecules, transition to the statistical coil conformation and further aggregation leading to the formation of a three-dimensional structure. The strength of this structure is mainly due to the hydrogen bonds and van-der-Waals (hydrophobic) bonds. According to the classification proposed by P. A. Rehinder, the casein gels structure can be classified as a coagulation-condensation structure.

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USSR

DUBROVSKIY, V.B., ZHOLDAK, G.I., KORENEVSKIY, V.V., PERGAMENSHCHIK, B.K.,
PEREVALOV, V.S.

UDC 621.059.52:691.3

"Concretes Using Iron-Ore Aggregates Under Conditions Of High Radiation--
Temperature Loads"

V sb. Vopr. fiz. zashchity reaktorov (Problems Of Physical Shielding Of Reactors-
Collection Of Works), Issue 5, Moscow, Atomizdat, 1972, pp 262-273 (from
RZh:Yadernyye reaktory, No 6, June 1972, Abstract No 6.50.125)

Translation: Portland cement hematitic concrete has good protective properties
even with an absence of water in it. It is sufficiently radiation resistant in
the presence of cumulative doses up to $7 \cdot 10^{20}$ n/cm². A significant change of
stability, modulus of deformation, thermal conductivity, and coefficient of
temperature expansion is not displayed. The expansion is discussed of concrete
during irradiation which reaches 1--2 percent (linear) with a cumulative dose of
(2--7) $\cdot 10^{20}$ n/cm², which it is necessary to take into account during planning
of the construction of shielding from this material. With a temperature close
to 1000° C portland cement hermatitic concrete preserves its properties to a
sufficient degree. It is shown experimentally that it is possible to use such
concrete in shielding at temperatures up to 800° C. 5 ill. 5 tab. 6 ref.

USSR

ZHOLDAKOVA, Z. I.

UDC 577.1:615.7/9

"Characteristic of Adaptive Processes in the Presence of Intoxication by Phenol Compounds"

V sb. Nauch. osnovy sovrem. metodov gigiyen. normirovaniya khim. veshchestv v okruzhayushchey srede (Scientific Principles of Modern Methods of Hygienic Normalization of Chemicals in the Environment -- collection of works), Moscow, 1971, pp 146-148 (from RZh-Biologicheskaya Khimiya, No 14, Jul 72, Abstract No 14F2053)

Translation: The peroral introduction of phenol compounds in a dose equal to LD₅₀ in mice treated in advance with phenol, resorcinol, pyrogallol or pyrocatechol 0.1 LD₅₀ (for 20 days) leads to the death of 10-20% of the animals. In most of the mice, no clinical symptoms of intoxication were detected. The injection of increasing doses of phenols in white rats for 24 days does not cause the death of the animals. It is considered that phenol and its derivatives have similar mechanisms of toxic effect and detoxication.

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USSR

ZHOLDAKOVA, Z. I.

UDC 577.1:615.7/9

"Characteristic of Adaptive Processes in the Presence of Intoxication by Phenol Compounds"

V sb. Nauch. osnovy sovrem. metodov gigen. normirovaniya khim. veshchestv v okruzhayushchey srede (Scientific Principles of Modern Methods of Hygienic Normalization of Chemicals in the Environment -- collection of works), Moscow, 1971, pp 146-148 (from RZh-Biologicheskaya Khimiya, No 14, Jul 72, Abstract No 14F2053)

Translation: The peroral introduction of phenol compounds in a dose equal to LD₅₀ in mice treated in advance with phenol, resorcinol, pyrogallol or pyrocatechol 0.1 LD₅₀ (for 20 days) leads to the death of 10-20% of the animals. In most of the mice, no clinical symptoms of intoxication were detected. The injection of increasing doses of phenols in white rats for 24 days does not cause the death of the animals. It is considered that phenol and its derivatives have similar mechanisms of toxic effect and detoxication.

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USSR

UDC 535.215

ZHOLKEVICH, G. A., BERSENEV, B. V., Vologda Pedagogical Institute

"Optical and Electrical Switching of Shadow Conductivity and Photoconductivity of ZnS Films at 77°K"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No. 3, 1972, pp 116-119

Abstract: Measurements of shadow-stimulated conductivity and photoconductivity as the light sum of the excitation by admixture or natural light increases are presented. It is noted that polycrystalline ZnS films sublimated with copper and chlorine admixtures have many properties which are determined by the macroscopic characteristics of their crystalline structures and by the corresponding distribution of the admixture. At temperatures below 200°K new properties arise, primarily the capacity to switch to a state of considerably higher (stimulated) conductivity under excitation by light or electrical voltage. Switching to stimulated shadow conductivity is accompanied by many other film properties: the degree of electrical luminescence increases by an order of magnitude, the thermal

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USSR

ZHOLKEVICH, G. A., BERSENEV, B. V., Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No. 3, 1972, pp 116-119

energy of activation of conductivity becomes very small, and stable filling of traps by excited charge carriers occurs. This experiment shows that the transition to the stimulated state occurs only during the exciting action of the light or field. If this action ceases, a stable state of partial stimulation is obtained. By thus increasing the sum of the excitations supplied, one comes to saturation of the stimulated conductivity, or to total stimulation. The magnitudes of the photocurrents corresponding to the intermediate values obtained for the stimulated thermal currents were established for each new portion of illumination by light of constant intensity.

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USSR

UDO 535.376

ZHOLKEVICH, G.A., DUDNIK, V.P.

"Thermoluminescent Analysis Of Infrared-Electroluminescence Of Sublimated Films Of Zinc Sulphide"

V sb. Elektrolyuminesentsiya tverd. tel. (Electroluminescence Of Solid Bodies--
Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 190-193. Discussion: p 193
(from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11B386)

Translation: An attempt is made to clarify, with the aid of thermally stimulated luminescence (TSL) and current (TSC), the sign of the carriers which provide emissive junctions in the infrared region of the spectrum. A record was simultaneously made of the TSL curves in the infrared and visible regions of the spectrum. It is shown that the infrared TSL, repeating the form of the visible TSL, is highly smoothed and structureless. Together with this individual peaks are observed, characteristic either of infrared radiation only or visible emission [svecheniye] only. The conclusion is made that the divergence of the curves of infrared and visible TSL, and also the spread of the curves of the infrared TSL, points to a p-type nature of the radiative recombinations in the infrared region of the spectrum. 3 ill. 5 ref. Summary.

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USSR

UDC: 621.5:681.325.65

BEL'SKIY, V. K., Engineer, and ZHOLKOV, YU. A. AND CHERDAKOV, A. D., Candidates of Technical Sciences

"Set of Fluidic Computer Devices"

Moscow, Pribery i Sistemy Upravleniya, No. 5, 1970, pp 17-19.

Abstract: A set of fluidics computer devices has been developed at the State Scientific Research Institute for Heat Engineering Instrument Building. The devices are discrete, modular units containing no moving parts. They are designed for the performance of the main digital and logic operations involved in the input, processing, storage and output of discrete information. These standard devices are designed for the construction of various control and computation equipment; devices of this type have never been described in the literature either in the USSR or abroad and have not as yet been manufactured by industry. The devices are manufactured on plates which can be stacked into blocks designed to fit into modular plug-in units performing various control and computational operations. Operating speeds include five cycles of addition or subtraction per second, 15 comparison operations per second, 25 code conversion operations per

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USSR .

BEL'SKIY, V. K., Engineer, and ZHOLKOV, YU. A. AND CHUDAKOV, A. D., Candidates of Technical Sciences, Moscow, Pribory i Sistemy Upravleniya, No. 5, 1970, pp 17-19.

second, 20 cycles of instruction readout per second or 4 cycles of manual information input per second.

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USSR

UDC: 535.37

SEVCHENKO, A. N., Academician of the Academy of Sciences of the BSSR,
BUROV, L. I., VOROPAY, Ye. S., ZHOLNEREVICH, I. I., SARZHEVSKIY, A. M.,
Belorussian State University imeni V. I. Lenin

"Polarization Curves of Fluorescence Induced by Two-Photon Excitation"
Minsk, Doklady Akademii Nauk SSSR, Vol 17, No 2, 1973, pp 117-120

Abstract: An expression is derived for the degree of polarization of fluorescence in the case of excitation by two linearly polarized light beams with arbitrarily oriented polarization vectors. The resultant expression can be used not only to calculate the degree of polarization of fluorescence for different orientations of the wave vectors and the vectors of polarization of the exciting fluxes but also to obtain information on the states participating in two photon absorption. Expressions are tabulated for the degree of fluorescence polarization as a function of the angle between the polarization vectors of the incident light beams with oblique recording of fluorescence. Polarization curves plotted from the expressions can give an idea of the kinds of oscillators taking part in processes of absorption and emission.

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1/2 018
TITLE--SPECTROPHOTOMETRIC AND ION EXCHANGE STUDY OF THE COMPLEXING OF
TITANIUM, IV, WITH MALIC ACID -U-
AUTHOR--ZHOLNIN, A.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1277-83
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COMPLEX COMPOUND, TITANIUM COMPOUND, MALIC ACID,
SPECTROPHOTOMETRIC ANALYSIS, PYROCATECHOL, STABILITY CONSTANT, ION
EXCHANGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0945
CIRC ACCESSION NO--AP0137973
STEP NO--UR/0078/70/015/005/1277/1283
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137973

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMATION OF $Ti(OH)$ SUB3 (C SUB4 H SUB4 O SUB5) PRIME NEGATIVE (I) (STABILITY CONST. 15.5 ± 0.2) TIMES 10^7 AT PH 4 WAS OBSERVED BY USING PYROCATECHOL AS A COMPETITIVE LIGAND. SPECTROPHOTOMETRIC AND ION EXCHANGE METHODS WERE USED TO STUDY THE EFFECT OF PH ON I FORMATION; THE MECHANISM OF THE REACTION IS $Ti(OH)$ SUB2 PRIME2 POSITIVE PLUS C SUB4 H SUB6 O SUB5 NEGATIVE (PH SMALLER THAN OR EQUAL TO 1) YIELDS $Ti(OH)$ SUB2 C SUB4 H SUB5 O SUB5) PRIME POSITIVE NEGATIVE (PH 2-7) YIELDS $Ti(OH)$ SUB3 C SUB4 H SUB4 O SUB5) PRIME NEGATIVE NEGATIVE (PH LARGER THAN 7) YIELDS $Ti(OH)$ SUB3 C SUB4 H SUB3 O SUB5) PRIME2 NEGATIVE.

UNCLASSIFIED

Acc. Nr:

AP0042077

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4-70 UR0365

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85558x Effect of the zinc plating method on the corrosion resistance of zinc coatings. Proskurkin, E. V.; Zholudev, M. D.; Gorbunov, N. S. (Vses. Nauch.-Issled. Inst. Tsvet. Metall. USSR). *Zashch. Metal.* 1970, 6(1), 54-6 (Russ.). The 10 x 40 mm rods of steel 10 were Zn plated by electrolytic and diffusion methods with and without heat treatment afterwards, and then subjected to the corrosion tests in tap Dniepr River water contg. salts 212, O₂ 11, free H₂CO₃ 27.4, Ca 39.3, Fe 0.1, and Cl⁻ 18.25 mg/l. and having hardness 3.14, basicity 1-2 mg equiv/l., and pH 7.17. The best corrosion resistance was shown by diffusion coatings obtained in a Zn bath contg. 0.12% Al and heat-treated at 500° for 10 min (corrosion rate 0.0092 g/m² hr, corrosion depth 4.1 μ). The poorest resistance (0.036 g/m² hr, 15.2 μ) were those obtained by the electrolytic method without heat treatment, but their treatment at 500° for 20 min increased the resistance by 2.5-fold. Generally, coatings consisting of a homogeneous layer of a Fe-Zn alloy showed good corrosion resistance.

J. Pietkiewicz

LD

REEL/FRAME
19751978

18

USSR

UDC 629.78:338.9

ZHONGOLOVICH, I. D.

"Determination of the Length of an Earth Chord by Means of Artificial Earth Satellite Laser Observations"

Byul. In-ta Teor. Astron. AN SSSR (Bulletin of the Institute of Theoretical Astronomy, Academy of Sciences, USSR), Vol 12, No 10, 1971, pp 851-865 (Summary in English) (from Referativnyy Zhurnal, Issledovaniye Kosmicheskogo Prostranstva, No 5, May 72, Abstract No 5.62.301, by L. P.)

Translation: The theory is presented of determination of the chord length between artificial earth satellite stations on the basis of synchronous photographic observation of an artificial earth satellite and simultaneous determination of the distances to it for three variants of solution of the problem. It is assumed that the chord direction has already been determined with sufficient exactness from special observations.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF COMBINED IRRADIATION ON THE FREQUENCY OF CHROMOSOMAL
ABERRATIONS AND MITOTIC ACTIVITY IN THE EPITHELIUM OF RAT SMALL
AUTHOR--ZHORNO, L.YA.
COUNTRY OF INFO--USSR
SOURCE--RADIOBIOLOGIYA 1970, 10(1), 122-3
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--X RAY IRRADIATION, GAMMA IRRADIATION, CERIUM ISOTOPE,
STRONTIUM ISOTOPE, MITOSIS, SMALL INTESTINE, CHROMATIC ABBERATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1849 STEP NO--UR/0205/70/010/001/0122/0123
CIRC ACCESSION NO--AP0127259
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0127259
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADULT MALE RATS WERE X IRRADIATED WITH 300 R OR FED, WITH OR WITHOUT PRELIMINARY X IRRADN., A MIXT. OF PRIME144 CE, AND PRIME90 SR FOR 120 DAYS, WITH TOTAL ACTIVITY OF 1.16 MU CI-RAT. CYTOL. AND OTHER ANALYSES OF CHROMOSOMAL ABERRATIONS AND THE MITOTIC ACTIVITY IN THE EPITHELIUM OF THE SMALL INTESTINE WERE DONE ON 6 MU SECTIONS. X IRRADN. INCREASED CHROMOSOMAL ABERRATIONS IMMEDIATELY TO A MAX. IN SIMILAR TO 24 HR, AND THE INCIDENCE DECLINED THEREAFTER TO NORMAL BY SIMILAR TO 20 DAYS. INTERNAL IRRADN. CAUSED A GRADUAL MONOTONIC INCREASE IN ABERRATIONS UP TO 120 DAYS. COMBINED TREATMENT CAUSED BOTH EARLY (SMALLER THAN 1 WEEK) INCREASE APPROX. THE SAME AS WITH X IRRADN. ALONE, AND A LATER SECONDARY INCREASE OF APPROX. THE SAME INTENSITY AS WITH ISOTOPES ALONE. FACILITY: LENINGRAD. NAUCH.-ISSLED. INST. RADIATS. GIS., LENINGRAD, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--AUTOMATIC MAINTENANCE AND CONTROL OF DEPTH OF ANESTHESIA -U-
AUTHOR--(05)--ZHOROV, I.S., SMIRNOV, V.G., MIKHELSON, V.A., KOTOVA, G.P.,
NIKITINA, L.G.
COUNTRY OF INFO--USSR
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP
57-61
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, MEDICAL APPARATUS, ELECTROENCEPHALOGRAPHY, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0637

STEP NO--UR/0481/70/000/002/0057/0061

CIRC ACCESSION NO--AP0108848

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108848

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DESCRIBE AN APPARATUS WHICH REGULATES AUTOMATICALLY THE AETHER DOSAGE ACCORDING TO ELECTROENCEPHALOGRAPHIC DATA. OVER 50 IMPORTANT OPERATIONS HAVE BEEN CARRIED OUT WITH THIS METHOD. THIS APPARATUS IS A PROTOTYPE OF THE APPARATUS FOR AUTOMATIC CONTROL OF ALL THE MODERN METHODS OF ANESTHESIA. THIS WILL REQUIRE FURTHER INVESTIGATION AND STUDY. FACILITY: KAFEDRA FAKUL'TETSKOY KHIRURGII 2-GO LECHEBNOGO FAKUL'TETA I MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM. I. M. SECHENOVA AND MNIIP MINISTERSTVA RADIOPRMYSHLENNOSTI SSSR.

UNCLASSIFIED

USSR

ZHOROV, P. A., Scientific Research Institute of General and Educational Psychology, Academy of Educational Sciences of the USSR, Moscow

"Variations in the Cortical-Subcortical Relationship and Reactive Characteristics of the EEG When Extinguishing the Orientation Reflex and Developing a Conditioned Reflex and Differentiation"

Moscow, Voprosy Psikhologii, No 2, 1972, pp 138-140

Abstract: EEG recordings were made while subjects underwent: a) extinction of the startle reaction to a 1000 Hz tone; b) galvanic skin response to a stimulus at twice the threshold; c) association of the 1000 Hz tone and the electric stimulus in a conditioned reflex; d) establishment of an 800 Hz tone as not part of the conditioned reflex.

Subjects were divided into four groups: cortical, cortical-subcortical, subcortical-cortical, and subcortical. EEG variations correlated with these differences were detected. Thus members of the first two groups could be distinguished from members of the last two by the total energy of the beta-rhythm in the occipital region; in the subcortical and subcortical-cortical subjects, the total energy increased when the conditioned reflex was established. Other measured differences were found, capable of distinguishing each of the four groups from all others.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MATHEMATICAL DESCRIPTION OF THE THERMAL CONTACT PREPARATION OF
HYDROGEN -U-
AUTHOR--OPRISHKO, A.A., AMERIK, B.K., ZHOBOV, YU.M., PASKUDSKAYA, L.A.,
YAKUNIN, O.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. TEKHNOLOG. TOPL. MASEL 1970, 15(3), 38-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--THERMODYNAMICS, THERMAL DECOMPOSITION, METHANE, ETHANE,
ETHYLENE, ACETYLENE, INDUSTRIAL PRODUCTION, HYDROGEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/2039 STEP NO--UR/0065/70/015/003/0038/0040
CIRC ACCESSION NO--AP0109971
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109971

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF DECOMPN. OF A CH SUB4-C SUB2 H SUB6-C SUB2 H SUB4-C SUB2 H SUB2 MIXT. IN CONTACT WITH AL SUB2 O SUB3 HEAT CARRIERS WAS DESCRIBED BY 11 EQUATIONS INCLUDING MATERIAL AND THERMAL BALANCES. THE EQUATIONS WERE RESOLVED BY THE RUNGE KUTTA METHOD AT VARIOUS TEMPS. OF THE HEAT CARRIER IN THE LOWER PART OF THE REACTOR AS A FUNCTION OF THE REACTOR TEMP. THE THERMAL EQUIL. OF THE GAS AND HEAT CARRIER STREAMS WAS ESTABLISHED IN 0.05 M, THE TEMP. DIFFERENCE BEING REDUCED TO LESS THAN OR EQUAL TO 4DEGREE SK. THE DECOMPN. OF CH SUB4 WAS INTENSIVE AT SIMILAR TO 1500DEGREE SK, AT WHICH THE TEMP. DIFFERENCE OF THE STREAMS INCREASED TO 30DEGREE SK.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LUMINESCENT CHROMATOGRAPHIC ANALYSIS OF PARAFFINIC AND NAPHTHENIC
HYDROCARBONS -U-
AUTHOR-(G3)-ZHODOV, YU.M., PANCHENKOV, G.M., SKRIPKINA, N.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(4), 55-6
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LUMINESCENCE, CHROMATOGRAPHY, ALKANE, NAPHTHENE, CHEMICAL
ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1704

STEP NO--UR/0065/70/015/004/0055/0056

CIRC ACCESSION NO--AP0125325

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